GRAPHIC MAP LOAD MEASURING TOOL (GMLMT)

USER EXTENSION FOR GIMP SOFTWARE

1.3

VERSION

USER MANUAL

FUNCTIONALITY

GMLMT is a tool designed for measuring graphic map load of maps in raster file format. The tool is based on metric using Sobel filter for edge detection and so can recognise both sharp and soft edges between colours. Therefore, GMLMT reflects both the amount of map symbols and their expressiveness to quantify the amount of map content ranging 0–100% (where 0 represents empty map while 100% represents fully-loaded map). GMLMT has been developed at the Department of Geoinformatics, Palacký University Olomouc. The tool works on Windows operational system.

INSTALLATION

GMLMT is available for download at radiat.cz/mapload under license CC BY-SA. The tool is designed as a Python script working as a user extension for open-source graphic editor GIMP. The GMLMT script file is necessary to be placed in a directory where GIMP seeks user extensions, which is typically: **C:\Users\<username>\AppData\Roaming\GIMP\2.10\plug-ins**. It is possible to change or add more folders to seek for extensions in GIMP GUI selecting **Edit → Preferences → Folders → Plug-ins**. After putting the script file into the folder and reopening GIMP, GMLMT can be found in menu **Filters → Edge detection**.

USE

GMLMT measures graphic map load of a whole map or its selected part. It is advised to be used with map images in resolution 100 DPI. Therefore, map need to be first exported from GIS or other software in a supported image format (e.g. JPG, TIF, PNG) in **100 DPI** resolution and **RGB** (RGBA) colour space. Later, map image can be imported into GIMP GUI clicking **File → Open** or by drag&drop moving the image into GIMP window. If the image is suitable for GMLMT, the tool becomes available in menu **Filters → Edge detection**. In the case the image colours are stored as monochrome or indexed, the mode can be changed in **Image → Mode → RGB** to RGB. If the aim is to measure map load of just part of the imported map, the area for measure needs to be selected by GIMP built-in tools for selections (e.g. Rectangle, Free or Fuzzy Select) prior to launching GMLMT.

When launching, GMLMT applies the edge detection and computes graphic map load level. The result is presented in a pop-up window after processing the image. After confirming, the graphic-map-load distribution is visualised over the image using semi-transparent grid with labels where light colour of the grid represents more loaded parts while the dark the less loaded parts. Results are also written into a text file **gmlmt_report.txt** created in users folder (typically **C:\Users\<username>**). This file includes timestamp (YYYYMMDD_hhmmss), name of the analysed image, graphic map load value [%], standard deviation of the pixelated segments [%], pixel count used for the measurement and resolution check (value "ok" for 100 DPI). Generating labels and text file can be deactivated in the script header.

CONTACT

GMLMT is provided by "as is" and "with all faults." Authors make no representations or warranties of any kind concerning the safety, suitability, lack of viruses, inaccuracies, typographical errors, or other harmful components of this software product.
In the case of non-standard behaviour, please, contact the software programmer:

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